

ABSTRACT

The present invention provides a lithium secondary battery which is improved in cycle characteristics and storage stability at an elevated temperature as well as protection from overcharge. In the battery, generation of a gas is also inhibited to prevent the battery from expansion. A non-aqueous electrolytic solution for the lithium secondary battery has an electrolyte in a non-aqueous solvent. The non-aqueous solvent is composed of a cyclic carbonate compound, a linear carbonate compound and a cyclohexylbenzene compound having a benzene ring to which one or two halogen atoms are attached. A volume ratio of the cyclic carbonate compound and the linear carbonate compound in the non-aqueous solvent is in the range of 20:80 to 40:60, or the non-aqueous solvent further contains a small amount of a branched alkylbenzene compound.